We Claim:

1. A multiwell plate for use in assaying samples, comprising:
   a frame that forms sidewalls of at least one well, the frame being formed from an organic polymeric material;
   a layer that forms a bottom of the at least one well, the layer being formed from an inorganic material; and. whereby the frame and the layer are covalently attached and bound without use of an adhesive.

2. The multiwell plate according to claim 1 wherein the organic polymeric material is a silane functional polymer polymer.

3. The multiwell plate according to claim 2 wherein the silane functional polymer polymer is poly(ethylene-co-trialkoxyvinylsilane).

4. The multiwell plate according to claim 1 wherein the inorganic material is glass.

5. The multiwell plate according to claim 1 wherein the glass is a borosilicate glass.

6. A multiwell plate forming a plurality of sample wells for holding samples to be assayed, said plate comprising:
   a unitary upper plate forming the sidewalls of the sample wells, said upper plate formed from a polymeric material;
   a unitary lower plate forming the bottom walls of the sample wells, said bottom wall having an upper surface and said lower plate comprised of an inorganic material; and,
   whereby said upper plate is joined to said upper surface by means other than by adhesive attachment.

7. The multiwell plate according to claim 6 wherein a biologically active coating is attached to said bottom walls.

8. The multiwell plate according to claim 6 wherein the upper plate and the lower plate are covalently attached.

9. The multiwell plate according to claim 6 wherein the organic polymeric material is a silane functional polymer polymer.

10. The multiwell plate according to claim 9 wherein the silane functional polymer polymer is poly(ethylene-co-trialkoxyvinylsilane).

11. The multiwell plate according to claim 6 wherein the inorganic material is glass.

12. The multiwell plate according to claim 11 wherein the glass is a borosilicate glass.

13. A method of making a multiwell plate comprising the steps of:

providing an upper plate having an array of open ended wells, said upper plate being formed from an organic polymeric material having a predetermined melting temperature;

providing a substantially flat transparent lower plate, said lower plate being comprised of an inorganic material;

contacting said upper plate to said lower plate at an interface;

heating said upper plate at said interface to the melting temperature of said polymeric material; and whereby said upper plate and said lower plate are bonded together.

14. The method of claim 13 wherein said upper plate and said lower plate are covalently bound.

15. The method of claim 13 wherein said upper plate further contains infra red absorbent particles blended therethrough, and said upper plate is heated at the interface by infra red radiation directed through the lower plate.

16. The method of claim 13 wherein the organic polymeric material is a silane functional polymer polymer.

17. The method of claim 16 wherein the silane functional polymer polymer is poly(ethylene-co-trialkoxyvinylsilane).

18. The method of claim 13 wherein the inorganic material is glass.

19. The method of claim 18 wherein the glass is a borosilicate glass.

20. A method of making a multiwell plate comprising the steps of:

providing an upper plate having an array of open ended wells, said upper plate being formed from an organic polymeric material having a predetermined melting temperature;

providing a substantially flat transparent lower plate, said lower plate being comprised of an inorganic material;

heating said lower plate to the melting temperature of said polymeric material;

contacting said upper plate to said lower plate at an interface whereby said upper plate and said lower plate are bonded together.

21. The method of claim 20 wherein the organic polymeric material is a silane functional polymer polymer.

22. The method of claim 21 wherein the silane functional polymer polymer is poly(ethylene-co-trialkoxyvinylsilane).

23. The method of claim 20 wherein the inorganic material is glass.

24. The method of claim 23 wherein the glass is a borosilicate glass.

25. A method of making a multiwell plate comprising the steps of:
providing an upper plate having an array of open ended wells, said upper plate being formed from an organic polymeric material having a predetermined melting temperature, said upper plate further containing a plurality of metallic flecks integrally blended therethrough;
providing a substantially flat transparent lower plate, said lower plate being comprised of an inorganic material;
contacting said upper plate to said lower plate at an interface;
directing a beam of electromagnetic radiation to the upper plate at said interface through said lower plate and thereby heating said upper plate to the melting temperature of said polymeric material; and,
whereby said upper plate and said lower plate are bonded together.

26. The method of claim 25 wherein the organic polymeric material is a silane functional polymer polymer.

27. The method of claim 26 wherein the silane functional polymer polymer is poly(ethylene-co-trialkoxyvinylsilane).

28. The method of claim 25 wherein the inorganic material is glass.

29. The method of claim 28 wherein the glass is a borosilicate glass.

30. A method of constructing a multiwell plate comprising:
providing an upper plate having an array of open ended wells;
providing a substantially flat lower plate;
contacting said upper plate to said lower plate at an interface;
providing an energy absorptive region at said interface;
heating said energy absorptive region using energy emitted from a radiation source; and,
whereby said radiation source does not physically contact said interface, said upper plate or said lower plate.

31. A method of joining an organic polymeric material to glass comprising:
providing a silane containing polymer part;
providing a glass part; and,
covalently bonding said polymer part to said glass part by means of siloxane linkages.

32. A multiwell plate for use in assaying samples compromising in combination:
an upper plate having at least one well therein extending between open ends on opposite surfaces of said upper plate;
a lower plate of polymer film having a thickness less than 5 mils and bonded to said upper plate by means other than adhesive attachment; and
whereby said lower plate extends across the at least one well creating a well bottom having a top surface.

33. The multiwell plate of claim 32 wherein said top surface of said well bottom has a flatness of less than 10 microns as measured across the diameter of said well.

34. The multiwell plate of claim 32 wherein said lower plate forms well bottoms for a matrix of wells, said lower plate having bottom surface having a flatness of no greater than 50 microns when measured across said entire bottom surface on a line intersecting the diameters of each said well bottom in said line.

35. The multiwell plate of claim 32 wherein said lower plate is porous.

36. A multiwell plate for use in assaying samples comprising:
at least one well having sidewalls and a bottom, said bottom having a top surface having a reactive coating imparted thereupon and whereby said sidewalls are free of said coating.

37. A method of making a multiwell plate comprising the steps of:

providing an upper plate having an array of open ended wells, said upper plate being formed from an organic polymeric material having a predetermined melting temperature;

providing a lower plate, said lower plate being comprised of an organic polymeric material having a predetermined melting temperature;

contacting said upper plate to said lower plate at an interface, said interface capable of absorbing infra-red radiation; and

heating said interface to the melting temperature of either the polymeric material of the lower plate, the polymeric material of the upper plate, or both; and whereby said upper plate and said lower plate are bonded together.

38. The method of claim 37 wherein said lower plate is transparent to infra red radiation.

39. The method of claim 38 wherein said upper plate is transparent to infra red radiation.

40. The method of claim 37 wherein the upper plate and the lower plate are made from the same organic polymeric material.

41. The method of claim 37 wherein the upper plate and lower plate are made from different organic polymeric materials.

42. The method of claim 37 wherein the upper plate is molded from a batch mixture to which an infra red absorbent material has been added.

43. The method of claim 42 wherein said infra-red absorbent material is carbon black.

44. The method of claim 42 wherein said infra-red absorbent material is a laser dye.

45. The method of claim 37 wherein said upper and lower plates are made from an infra-red transparent material and wherein an infra-red absorbent material is applied to a portion of the upper plate which contacts the lower plate during the contacting step.

46. The method of claim 37 wherein said upper and lower plates are made from an infra-red transparent material and wherein an infra-red absorbent material is applied to a portion of said lower plate which contacts the upper plate during the contacting step.

47. The method of claim 37 further comprising the step of cleaning the upper and lower plates prior to said contacting step.

48. The method of claim 37 further comprising treating a contacting surface of said lower plate, treating a contacting surface of said upper plate, or treating the contacting surface of both upper and lower plates with gamma radiation prior to said contacting step.

49. The method of claim 37 further comprising the step of imparting a reactive coating to an upper surface of said lower plate, prior to said contacting step.

50. A method of making a multiwell plate comprising the steps of:

providing an upper plate having an array of open ended wells, said upper plate being formed from an organic polymeric material having a predetermined melting temperature;

providing a lower plate, said lower plate being comprised of an organic polymeric material having a predetermined melting temperature;

contacting said upper plate to said lower plate at an interface, said interface capable of absorbing electromagnetic radiation; and

heating said interface to the melting temperature of either the polymeric material of the lower plate, the polymeric material of the upper plate, or both; and

whereby said upper plate and said lower plate are bonded together.